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09/609,091	06/30/2000	David L Deitz	06005/36803	1769

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EXAMINER	
ALI, SYED J	

ART UNIT	PAPER NUMBER
2195	

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/609,091	DEITZ ET AL.	
	Examiner	Art Unit	
	Syed J Ali	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-10,12-32,34-37 and 39-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-10,12-32,34-37 and 39-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *Nov. 26, 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 29, 2004 has been entered.

2. This office action is in response to the amendment filed November 29, 2004. Claims 1, 3-10, 12-32, 34-37, and 39-50 are presented for examination.

3. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior office action.

Claim Rejections - 35 USC § 103

4. **Claims 1, 8, 10, 17, 31-32, 34-37, 39-44, 47-48, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Andrade, Jr. et al. (USPN 6,606,527) (hereinafter de Andrade) in view of Irwin et al. (USPN 6,385,496) (hereinafter Irwin).**

5. As per claim 1, de Andrade teaches the invention as claimed including a method of creating a batch process campaign including a plurality of batches for use in a process control system having a batch creation function in communication with a database containing batch information and a graphical user interface, the method comprising the steps of:

sending a first message requesting batch information to the batch creation function (col. 6 lines 35-62);

receiving a second message containing a set of batch information in response to the first message requesting batch information, the set of batch information containing recipe information (col. 7 lines 10-16; col. 7 line 64 - col. 8 line 7);

displaying the set of batch information using the graphical user interface (col. 3 lines 20-26);

generating a first input identifying a subset of the set of batch information from the set of batch information to be included within at least one batch from the plurality of batches (col. 8 lines 34-40);

generating a second input specifying campaign information to be included within the batch process campaign (col. 8 lines 12-20); and

using the first and second inputs to create the batch process campaign (col. 8 lines 12-20).

6. Irwin teaches the invention as claimed, including allowing prompting a user to enter inputs of a batch campaign (col. 4 lines 54-57); and

executing the batch process campaign by releasing batch process instructions a batch executive function (col. 4 lines 50-54), wherein the batch executive function sends instructions to a process controller (col. 4 lines 54-57) for directing a set of field devices to carry out process steps associated with the batch being executed by the batch executive function (col. 5 lines 1-9).

7. It would have been obvious to one of ordinary skill in the art to combine de Andrade and Irwin since the production scheduling of de Andrade, while allowing a production sequence for an entire plant to be effectuated, is silent regarding details of the actual implementation of the

production sequence on physical equipment. Irwin provides a method of allowing a user to design process control routines and have the routine implemented in a batch-processing environment. The system is highly modularized, allowing compatibility across a wide variety of systems in addition to simple updating of equipment. The system of Irwin is able to effectuate various batch recipes across similar production equipment by means of a process controller that regulates the production process. The combination with de Andrade allows a complex batch processing campaign to be implemented, regulated, updated, and edited with ease.

8. As per claim 8, Irwin teaches the invention as claimed, including the method of claim 1, wherein the step of prompting the user to enter the second input specifying campaign information to be included within the batch process campaign includes the step of prompting the user to specify a parameter value associated with a process step (col. 4 lines 54-57).

9. As per claims 10 and 17, de Andrade teaches the invention as claimed, including a system comprising a computer readable medium and a plurality of routines stored on the computer readable medium adapted to be executed by a processor, wherein the system performs the method of claims 1 and 8, respectively (col. 4 lines 31-46).

10. As per claim 31, de Andrade teaches the invention as claimed, including a method of editing a batch process campaign including a plurality of batches for use in a process control system having a graphical user interface and a data store, the method comprising the steps of:

prompting a user to enter a first input via the graphical user interface identifying one or more unreleased batches from the batch process campaign (col. 4 lines 6-9);

prompting the user to enter a second input via the graphical user interface specifying a change to batch information associated with the identified one or more unreleased batches, including prompting the user to enter an input specifying a recipe change to the batch information (col. 4 lines 6-9); and

storing the change to the batch information together with the batch process campaign in the data store (col. 6 lines 5-9).

11. Irwin teaches the invention as claimed, including sending a batch of the batch process campaign to a batch executive function (col. 4 lines 50-54), wherein the batch executive function sends instructions to a process controller (col. 4 lines 54-57) for directing a set of field devices to carry out process steps associated with the batch being executed by the batch executive function (col. 5 lines 1-9).

12. As per claim 32, de Andrade teaches the invention as claimed, including the method of claim 31, wherein the step of prompting the user to enter the second input via the graphical user interface specifying the change to batch information associated with the identified one or more unreleased batches includes the step of prompting the user to enter the second input while the batch process campaign is executing (col. 4 lines 6-9).

13. As per claim 34, de Andrade teaches the invention as claimed, including the method of claim 31, wherein the step of prompting the user to enter the first input via the graphical user

interface specifying the change to the batch information associated with the identified one or more unreleased batches includes the step of prompting the user to enter an input specifying a parameter value change (col. 4 lines 6-9).

14. As per claim 35, de Andrade teaches the invention as claimed, including the method of claim 31, wherein the step of prompting the user to enter the second input via the graphical user interface specifying the change to the batch information associated with the identified one or more unreleased batches includes the step of prompting the user to enter an input specifying an additional batch to be added to the batch process campaign (col. 10 lines 57-61).

15. As per claims 36-37 and 39-40, de Andrade teaches the invention as claimed, including a system comprising a computer readable medium and a plurality of routines stored on the computer readable medium adapted to be executed by a processor, wherein the system performs the method of claims 31-32 and 34-35, respectively (col. 4 lines 31-46).

16. As per claim 41, de Andrade teaches the invention as claimed, including a batch process campaign management system for use in a process control system, comprising:

a batch executive including a batch information database and a batch execution engine (col. 2 line 62 - col. 3 line 8; col. 4 lines 10-30; col. 6 lines 5-9); and

a campaign manager communicatively coupled to the batch executive that exchanges messages with the batch executive, wherein the messages contain batch-related information from

the batch information database and campaign-related information generated by the campaign manager (col. 8 lines 12-20).

17. Irwin teaches the invention as claimed, including a process controller for controlling a set of field devices (col. 5 lines 1-9), wherein the process controller accepts instructions from the batch executive for directing the field devices to carry out the process steps associated with a batch within the batch process campaign (col. 4 lines 50-57).

18. As per claim 42, de Andrade teaches the invention as claimed, including the system of claim 41, wherein the batch executive further includes a batch definition/instantiation function (col. 6 lines 48-57).

19. As per claim 43, de Andrade teaches the invention as claimed, including the system of claim 41, further comprising a graphical user interface that is communicatively coupled to the campaign manager, and wherein the campaign manager includes a campaign creation function, a campaign execution function and a campaign editing function (col. 3 lines 20-26).

20. As per claim 44, de Andrade teaches the invention as claimed, including the system of claim 43, wherein the campaign creation function displays batch information using the graphical user interface and the batch-related information from the batch information database (col. 4 lines 19-24).

21. As per claim 47, de Andrade teaches the invention as claimed, including the system of claim 41, wherein the batch-related information includes recipe information (col. 7 lines 10-16).

22. As per claim 48, de Andrade teaches the invention as claimed, including the system of claim 41, wherein the batch-related information includes parameters associated with process steps (col. 7 lines 10-16).

23. As per claim 50, de Andrade teaches the invention as claimed, including the system of claim 41, wherein the campaign manager automatically sends messages to a batch historian that maintains historical campaign information (col. 6 lines 5-9) and a security system that controls user access (col. 3 lines 15-19).

24. **Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Andrade in view of Irwin in view of Allen et al. (USPN 6,292,708) (hereinafter Allen).**

25. As per claim 3, Allen teaches the invention as claimed, including the following limitations not shown by de Andrade:

the method of claim 1, wherein the step of requesting the recipe information includes the step of requesting recipe information associated with a setup batch (col. 7 lines 10-30, "master control module 204 is configured to download setup data, e.g., processing recipes, to application control modules 202 in response to the initiation of the wafer processing procedure").

26. It would have been obvious to one of ordinary skill in the art to combine de Andrade, Irwin, and Allen since the use of a setup batch would allow for the production to be initialized such that the equipment may be properly prepared for a specific type of production, thereby eliminating potential contamination or other adverse consequences.

27. As per claim 12, de Andrade teaches the invention as claimed, including a system comprising a computer readable medium and a plurality of routines stored on the computer readable medium adapted to be executed by a processor, wherein the system performs the method of claim 3 (col. 4 lines 31-46).

28. **Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Andrade in view of Irwin in view of Guldi (USPN 6,488,037).**

29. As per claim 4, Guldi teaches the invention as claimed, including the method of claim 1, wherein the step of requesting the recipe information includes the step of requesting recipe information associated with a cleanup batch (col. 3 lines 8-24).

30. It would have been obvious to one of ordinary skill in the art to combine de Andrade, Irwin, and Guldi since the use of a cleanup batch to flush out the production components would reduce the chances for contamination between batches.

31. As per claim 13, de Andrade teaches the invention as claimed, including a system comprising a computer readable medium and a plurality of routines stored on the computer

readable medium adapted to be executed by a processor, wherein the system performs the method of claim 4 (col. 4 lines 31-46).

32. **Claims 5, 14, 19-23, 25-29, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Andrade in view of Irwin in view of Asano et al. (6,000,830) (hereinafter Asano).**

33. As per claim 5, Asano teaches the invention as claimed, including the method of claim 1, wherein the step of prompting the user to enter the second input specifying campaign information to be included within the batch process campaign includes the step of prompting the user to specify a batch execution mode (col. 5 lines 24-35).

34. It would have been obvious to one of ordinary skill in the art to combine de Andrade and Asano since the specification of various modes of execution allows the same system to perform various types of tasks. This not only allows the operator of the system to indicate the most appropriate mode of execution at execution time, but it also allows the designers of the system to increase the scalability of the system to meet multiple goals, since the system is capable of switching between various types of jobs.

35. As per claim 14, de Andrade teaches the invention as claimed, including a system comprising a computer readable medium and a plurality of routines stored on the computer readable medium adapted to be executed by a processor, wherein the system performs the method of claim 5 (col. 4 lines 31-46).

36. As per claim 19, de Andrade teaches the invention as claimed, including a method of executing a batch process campaign including a plurality of batches for use in a process control system having a batch execution function, the method comprising the steps of:

releasing one or more batches from the plurality of batches to the batch execution function (col. 10 lines 35-52); and

sending messages to the batch execution function to cause the batch execution function to execute one or more of the released batches (col. 13 lines 20-25).

37. Irwin teaches the invention as claimed, wherein the batch execution function sends instructions to a process controller for directing a set of field devices to carry out process steps associated with the batch of the batch process campaign being executed by the batch executive function (col. 4 line 50 - col. 5 line 9).

38. Asano teaches the invention as claimed, including determining a batch execution mode associated with the process campaign and executing the batches based on the execution mode (col. 5 lines 24-35).

39. As per claim 20, de Andrade teaches the invention as claimed, including the method of claim 19, wherein the step of releasing the one or more batches from the plurality of batches to the batch execution function based on the batch execution mode includes the step of releasing a ready batch prior to the complete execution of a currently executing batch (col. 10 lines 35-52).

40. As per claim 21, Asano teaches the invention as claimed, including the method of claim 19, wherein the step of sending the messages to the batch execution function to cause the batch execution function to execute the one or more of the released batches includes the step of sending a message to cause the batch execution function to execute the one or more released batches according to the batch execution mode (col. 5 lines 24-35).

41. As per claim 22, de Andrade teaches the invention as claimed, including the method of claim 19, wherein the step of sending the messages to the batch execution function to cause the batch execution function to execute the one or more of the released batches includes the step of sending a message specifying a parameter value associated with a process step associated with the one or more of the released batches step (col. 4 lines 6-9; col. 8 lines 8-11).

42. As per claim 23, de Andrade teaches the invention as claimed, including the method of claim 19, wherein the step of sending the messages to the batch execution function to cause the batch execution function to execute the one or more of the released batches includes the step of sending a message specifying a recipe associated with the one or more of the released batches step (col. 7 lines 10-16).

43. As per claims 25-29, de Andrade teaches the invention as claimed, including a system comprising a computer readable medium and a plurality of routines stored on the computer readable medium adapted to be executed by a processor, wherein the system performs the method of claims 19-23, respectively (col. 4 lines 31-46).

44. As per claim 49, de Andrade teaches the invention as claimed, including the system of claim 41, wherein the campaign-related information includes a batch execution mode (col. 5 lines 24-35).

45. **Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Andrade in view of Irwin in view of Hohkibara et al. (USPN 6,438,436) (hereinafter Hohkibara).**

46. As per claim 6, Hohkibara teaches the invention as claimed, including the method of claim 1, wherein the step of prompting the user to enter the second input specifying campaign information to be included within the batch process campaign includes the step of prompting the user to specify a maximum number of active batches (col. 2 line 65 - col. 3 line 7).

47. It would have been obvious to one of ordinary skill in the art to combine de Andrade, Irwin, and Hohkibara since it would allow the user to specify a threshold that ensures that the system does not exceed its capabilities. For example, if some sort of error were to occur during the manufacturing process, specifying a maximum number of batches to produce would ensure that a large number of batches are not defective. This would allow user intervention at a point where recovery could occur early enough that the problem does not cause undue waste of resources.

48. As per claim 16, de Andrade teaches the invention as claimed, including a system comprising a computer readable medium and a plurality of routines stored on the computer readable medium adapted to be executed by a processor, wherein the system performs the method of claim 6 (col. 4 lines 31-46).

49. **Claims 7, 9, 15, 18, and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Andrade in view of Sargent (USPN 5,113,350).**

50. As per claim 7, Sargent teaches the invention as claimed, including the method of claim 1, wherein the step of prompting the user to enter the second input specifying campaign information to be included with the batch process campaign includes the step of prompting the user to specify a number of batches within the batch process campaign (col. 3 lines 39-60).

51. It would have been obvious to one of ordinary skill in the art to combine de Andrade, Irwin, and Sargent since automating the process of batch production to the point where there is no control over the number of batches may cause a waste in resources. Specifically, if only a few batches need to be produced, but the system is automated such that hundreds of batches are produced at a time, the excess may be wasted. By allowing the user to specify the number of batches as suggested by Sargent, the system can make most efficient use of resources by only producing the number of batches necessary.

52. As per claim 9, Sargent discloses the method of claim 1, wherein the step of prompting the user to enter the second input specifying campaign information to be included within the

batch process campaign includes the step of prompting the user to specify batch identification information (col. 3 lines 39-60).

53. As per claims 15 and 18, de Andrade teaches the invention as claimed, including a system comprising a computer readable medium and a plurality of routines stored on the computer readable medium adapted to be executed by a processor, wherein the system performs the method of claims 7 and 9, respectively (col. 4 lines 31-46).

54. As per claim 45, Sargent discloses the system of claim 44, wherein the campaign creation function processes user inputs identifying a set of the displayed batch information to be included within a batch process campaign (col. 3 lines 39-60).

55. As per claim 46, Allen discloses the system of claim 45, wherein the batch process campaign includes multiple types of batches (col. 6 line 62- col. 7 line 9).

56. **Claims 24 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Andrade in view of Irwin in view of Asano in view of Hohkibara.**

57. As per claim 24, Hohkibara teaches the invention as claimed, including the method of claim 19, wherein the step of releasing the one or more batches from the plurality of batches to the batch execution function based on the batch execution mode includes the step of releasing the

one or more batches from the plurality of batches according to a user specified maximum number of active batches (col. 2 line 65 - col. 3 line 7).

58. It would have been obvious to one of ordinary skill in the art to combine de Andrade, Irwin, Asano, and Hohkibara since it would allow the user to specify a threshold that ensures that the system does not exceed its capabilities. For example, if some sort of error were to occur during the manufacturing process, specifying a maximum number of batches to produce would ensure that a large number of batches are not defective. This would allow user intervention at a point where recovery could occur early enough that the problem does not cause undue waste of resources.

59. As per claim 30, de Andrade teaches the invention as claimed, including a system comprising a computer readable medium and a plurality of routines stored on the computer readable medium adapted to be executed by a processor, wherein the system performs the method of claim 24 (col. 4 lines 31-46).

Response to Arguments

60. **Applicant's arguments with respect to claims 1, 3-10, 12-32, 34-37, and 39-50 have been considered but are moot in view of the new grounds of rejection.**

Conclusion

61. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed J Ali whose telephone number is (571) 272-3769. The examiner can normally be reached on Mon-Fri 8-5:30, 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai T An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Syed Ali
April 15, 2005

MAJID BANANKHAH
PRIMARY EXAMINER